Issued April 20, 1912.

U. S. DEPARTMENT OF AGRICULTURE.

FARMERS' BULLETIN 493.

Rev.ed. follows

THE ENGLISH SPARROW AS A PEST.

BY

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WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1912.

LETTER OF TRANSMITTAL.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF BIOLOGICAL SURVEY,
Washington, D. C., February 20, 1912.

SIR: I have the honor to submit herewith and to recommend for publication as a Farmers' Bulletin a report entitled "The English Sparrow as a Pest," by Ned Dearborn, assistant in the Biological Survey, which is designed to supersede No. 383 of the same series. Introduced into America only about 60 years ago, the English sparrow in this comparatively short period has overspread most of the United States and has extended its range even into southern Canada. The bird has many objectionable habits and few redeeming qualities and, as its general extermination is out of the question because of the necessary expense, its numbers should be reduced so far as possible. The chief aim of the present bulletin is to describe the best methods of effecting this reduction of numbers. Trapping, wherever practicable, is recommended above all other methods, more particularly as English sparrows form an excellent and nutritious article of diet.

Respectfully,

HENRY W. HENSHAW,
Chief, Biological Survey.

Hon. JAMES WILSON,
Secretary of Agriculture.

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THE ENGLISH SPARROW AS A PEST.

INTRODUCTION.

DISTRIBUTION.

The English sparrow was introduced into America a little more than 60 years ago, and is now distributed over nearly all of the United States and southern Canada. This rapid dissemination is a result of the bird's hardiness, extraordinary fecundity, diversity of food, aggressive disposition, and almost complete immunity from natural enemies.

ECONOMIC STATUS.

The English sparrow among birds, like the rat among mammals, is cunning, destructive, and filthy. Its natural diet consists of seeds, but it eats a great variety of other foods. While much of its fare consists of waste material from the streets, in autumn and winter it consumes quantities of weed seed and in summer numerous insects. The destruction of weed seed should undeniably count in the sparrow's favor. Its record as to insects in most localities is not so clear. In exceptional cases it has been found very useful as a destroyer of insect pests. For example, during a recent investigation by this bureau of birds that destroy the alfalfa weevil in northern Utah, English sparrows were feeding their nestlings largely on weevil larvæ and cutworms, both of which are very injurious to alfalfa. In this case the sparrows, attracted by grain in the fields and poultry runs and by the excellent nest sites afforded by the thatched roofs of many farm buildings, had left the city and taken up their abode in the country where the weevil outbreak subsequently occurred. Unfortunately, however, farmers can rarely expect such aid against their insect foes. Wherever this bird proves useful, however, it is entitled to protection and encouragement in proportion to its net value.

Under normal conditions its choice of insects is often unfavorable. Out of 522 English sparrow stomachs examined by the Biological Survey,[1] 47 contained noxious insects, 50 held beneficial insects, and

[1] U. S. Department of Agriculture, Division of Economic Ornithology and Mammalogy, Bulletin 1, The English Sparrow in North America, p. 143, 1889. An exhaustive account now out of print.

31 contained insects of little or no importance. The bulletin just referred to shows conclusively that, aside from the destruction of weed seed, there is, in general, very little to be said in the sparrow's favor.

On the other hand much is to be said against the bird. It destroys fruit, as cherries, grapes, pears, and peaches. It also destroys buds and flowers of cultivated trees, shrubs, and vines. In the garden it eats seeds as they ripen, and nips off tender young vegetables, especially peas and lettuce, as they appear above ground. It damages wheat and other grains, whether newly sown, ripening, or in shocks. As a flock of 50 sparrows requires daily the equivalent of a quart of wheat, the annual loss caused by these birds throughout the country is very great. It reduces the numbers of some of our most useful and attractive native birds, as bluebirds, house wrens, purple martins, tree swallows, cliff swallows, and barn swallows, by destroying their eggs and young and by usurping nesting places. It attacks other familiar species, as the robin, wren, red-eyed vireo, catbird, and mocking bird, causing them to desert parks and shady streets of towns. Unlike our native birds whose place it usurps, it has no song, but is noisy and vituperative. It defiles buildings and ornamental trees, shrubs, and vines with its excrement and with its bulky nests.

The evidence against the English sparrow is, on the whole, overwhelming, and the present unfriendly attitude of the public towards it is reflected in our State laws. Nowhere is it included among protected birds.

LOCALIZATION.

Although English sparrows are widely distributed as a species, individuals and flocks have an extremely narrow range, each flock occupying one locality to which its activities are chiefly confined. This fact is favorable to their extermination, for when a place has once been cleared of sparrows some time elapses before it is reoccupied. This tendency to remain on special territory was well shown during a recent experiment with a flock in a small city garden. During the fall steady trapping reduced the resident flock in the garden to a dozen individuals, 274 birds having been trapped. The survivors were poisoned. Though another flock lived in the street just beyond the fence, the garden was sparrow free for three months. In the following spring a few sparrows appeared, but were soon trapped. After this the garden continued throughout the summer without a resident flock, and only rarely was it visited by sparrows from other parts of the neighborhood.

AIDING NATIVE BIRDS AGAINST THE ENGLISH SPARROW.

One of the greatest objections to the English sparrow is its aggressive antagonism toward the small native birds, especially those familiar species which, like itself, build their nests in cavities. Nest

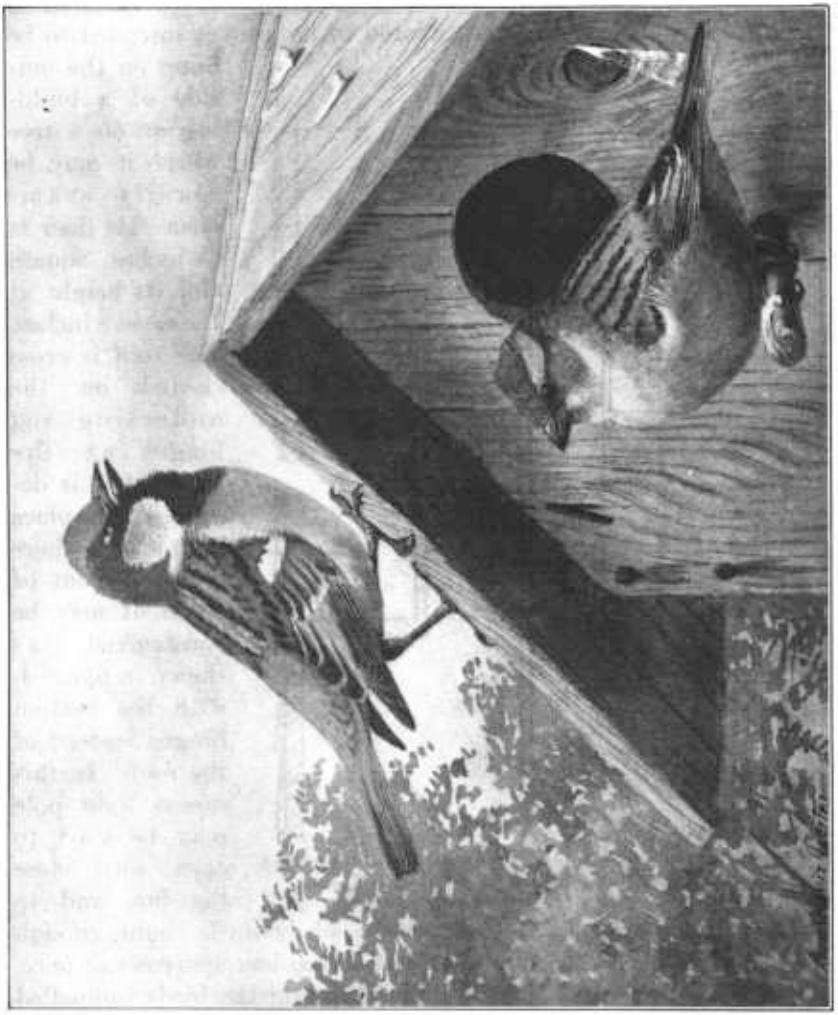

FIG. 1.—English sparrow, male and female, showing the manner in which they take possession of nesting boxes provided for native birds.

boxes provided for bluebirds, martins, or wrens—birds both useful and pleasing—too often fall into the possession of this graceless alien, either by the right of discovery or by piratical assault. Fortunately it is possible to aid the native birds by selecting suitable nest boxes. Thus, a box having an entrance 1 inch in diameter will admit house wrens, but not sparrows. Boxes for larger birds, as

illustrated in figures 2, 3, and 4, may be constructed so that unwelcome tenants can be readily evicted and at the same time acceptable to more desirable species. When a sparrow has had its nest and eggs removed from a box, it not only as a rule seeks another place for its next nest, but is likely to avoid that type of nest box in future.

Figure 2 represents a nest box designed for the interior of a dilapidated building, a hole being cut in an outer wall of the building to form the entrance. The box illustrated in figure 3 is intended to be hung on the outside of a building or on a tree where it may be readily examined. Its floor is 6 inches square and its height at the eaves 8 inches. The roof is cross cleated on the underside and hinged at the top. If it is desired to place such a box where it will be out of reach, it may be constructed, as shown in figure 4, with the bottom hinged instead of the roof. In this case a light pole may be used to open and close the box and to dislodge sparrow nests. As the cost of such boxes is slight, enough should be provided to accommodate all the resident sparrows at once, in order that their nests may be broken up and the birds compelled to seek other quarters as early in the breeding season as possible. All nest boxes designed to be occupied by native birds should be carefully built to avoid warping of parts and consequent drafts of air.

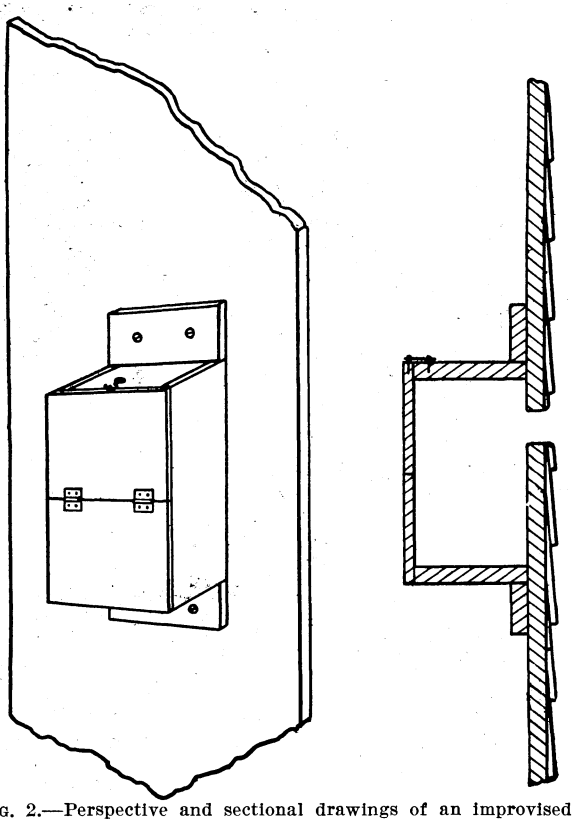

FIG. 2.—Perspective and sectional drawings of an improvised nest box for the interior of buildings.

DRIVING SPARROWS FROM ROOSTS.

Sparrows frequently become a nuisance by roosting in ornamental vines and in crevices about buildings. If scared out late at night, several nights in succession, they will usually desert the roost. A stream of water from a garden hose is a potent ejector, particularly on frosty nights. Where water is not available small Roman candles may be employed.

Though sparrows may be driven from a given neighborhood, the relief thus obtained is only temporary, and has the further objection that the nuisance is simply transferred elsewhere. More drastic action is therefore preferable.

PREVENTION OF INCREASE.

The most effective method of preventing the increase of sparrows in a locality is to destroy their nests at intervals of 10 or 12 days throughout the breeding season. In a town of 4,000 inhabitants, where this method of attack has been practiced during the past four years, 20,000 eggs have been destroyed and the number of sparrows has been greatly reduced. This work, however, should not be entrusted to boys or persons unfamiliar with the native species, as otherwise valuable birds may be destroyed under the belief that they are English sparrows. Occasionally they build large covered nests in trees, but as a rule they build open nests in bird houses, electric-light hoods, cornices, waterspouts, and similar places. While it is often difficult to reach nests by hand, they can usually be torn down by means of a long pole having an iron hook at the tip. By concerted and continuous efforts to destroy every nest after the eggs are laid, the numbers of English sparrows in any locality may be rapidly reduced.

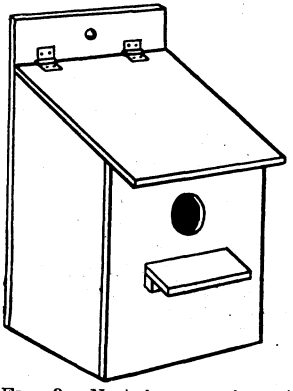

FIG. 3.—Nest box opening at the top.

METHODS OF DESTROYING.

CATCHING ON NESTS.

The sparrow's habit of nesting in cavities can be turned to account against it. By providing one-room bird houses, similar to those illustrated in figures 3 and 4, or even packing boxes or tin cans, and putting them in trees or on poles or buildings at a height of about 10 feet, the birds may be captured after dark with a long-handled

net. The net should have a deep bag and a small hoop. After the net has been quietly placed over the entrance, a few raps on the box will send the occupant into it. By distributing a number of nest boxes about orchards, shade trees, and outbuildings, and catching the sparrows that occupy them, the work of extermination may be carried on at a season when other methods are least effective.

SHOOTING.

Sparrows are accustomed to feed in close flocks, and when thus assembled in favorable places a large number may be killed by a charge of No. 10 shot. The best way is to scatter grain over long, narrow areas and shoot the sparrows at these baiting places. Where sparrows infest poultry yards, the bait may be placed on a horizontal board, supported at such an elevation that the birds can be shot without danger to the poultry.

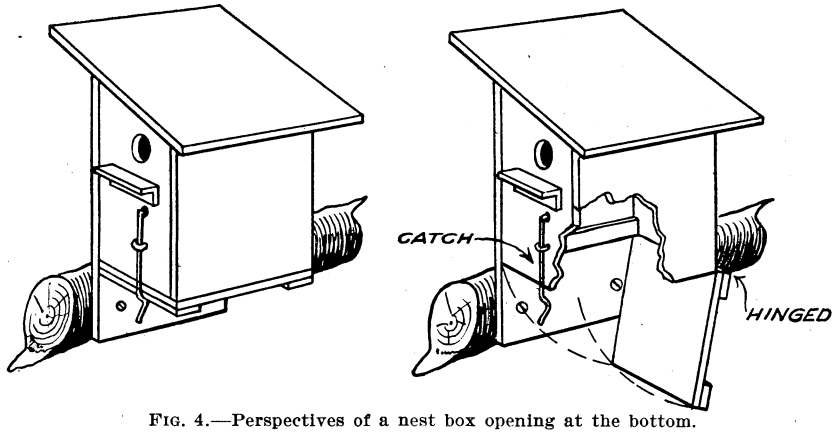

FIG. 4.—Perspectives of a nest box opening at the bottom.

TRAPPING.

In a general campaign against English sparrows, a vigorous and widespread attack is absolutely essential. The problem is not to drive them away from a certain locality, but to accomplish as nearly as possible their complete extermination. As each city square has a sparrow population of its own, which must be destroyed there if at all, certain effective methods of destruction are out of the question. Neither law nor public sentiment will allow the use of firearms or the unrestricted use of poison. The use of traps therefore is strongly recommended. Besides being safe to employ, properly designed sparrow traps have other advantages. They permit the use of sparrows for food, as they leave the flesh uninjured, and these birds may be kept alive, like poultry. The fact that native birds, when caught in such traps, can be liberated unharmed, is particularly important in suburban localities.

Sparrow traps may be classified, according to their nature, as nest-box traps and bait traps. Inasmuch as sparrows usually feed in flocks, but approach nest boxes only singly or in pairs, the annual catch of a bait trap will exceed that of a nest-box trap many fold. During the breeding season, however, nest-box traps are decidedly useful.

NEST-BOX TRAPS.

A nest-box trap, as its name implies, looks like an ordinary nest box. The weight of a bird entering such a trap puts into operation a mechanism which catches the bird and sets the trap for another. There are a number of devices to accomplish this. In designing a nest-box trap one should bear in mind that English sparrows, like other birds, dislike drafty quarters, and that a mechanism delicate enough to be operated by a sparrow's weight is likely to get out of order unless the parts are few and well protected from the weather.

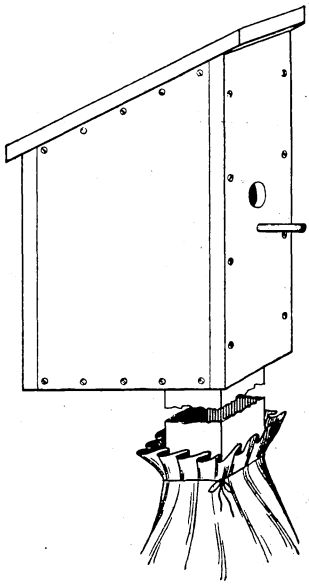

FIG. 5.—Tesch nest-box trap.

Tesch trap.—Probably the simplest nest-box trap yet designed is the one illustrated by figure 5. The trap described below is a modification of the one invented by Mr. Charles H. Tesch, of Milwaukee, Wis., who furnished plans of his trap and kindly placed at our disposal the results of his experiments. With his trap Mr. Tesch caught sparrows bent on finding a home as fast as they came along. The essential parts of the trap are: (1) A box, (2) a tipping chamber within the box, (3) a down spout below it, and (4) a bag at the lower end of the down spout. The dimensions of the several parts are given in figure 6. The tipping chamber is made of tin, the down spout of wood or tin, the box of wood. The roof board is cleated across the ends, and also lengthwise between the cross cleats, for the attachment of the sides, as shown in the right-hand drawing, figure 6. The close weave of a 2-bushel bag makes it suitable for the lower end of the down spout. One of coarser fabric would allow a draft through the spout and thus detract from the efficiency of the trap. In building this trap the front wall is the last piece to go in place. It is fastened there by screws, so the trap can easily be overhauled. It is a good plan to fasten with shellac a few feathers or bits of hay

to the floor of the tipping chamber near the rear end to excite the interest of sparrows and hasten their entrance.

BAIT TRAPS.

The selection of a bait trap depends somewhat upon the conditions under which it is to be used. Where food is plenty, as in stable yards, poultry runs, and open markets, sparrows have no incentive to

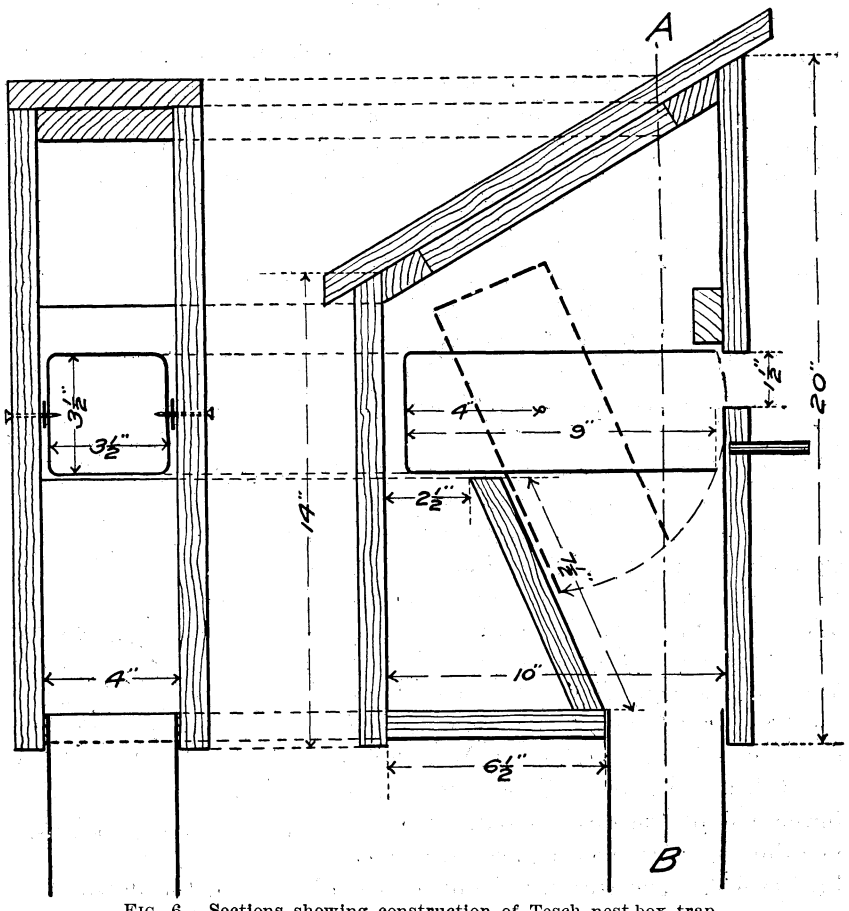

FIG. 6.—Sections showing construction of Tesch nest-box trap.

run risks; and under such circumstances a trap to be effective must be simple so as not to excite suspicion.

Sieve Trap.—The sieve trap shown in figure 7 is adapted for service where food is abundant. In the duck yards of the National Zoological Park, Washington, D. C., it is the only trap that has proved successful. It consists of a shallow box not less than 4 feet square, open on one side, covered with woven wire on the other, and having a small door near one corner. In setting this trap, one side

rests on the ground, which is carefully smoothed where the trap will fall, while the opposite side is supported by a stick 18 inches long. Near the upper end of this stick is attached a long cord, and between the top of it and the edge of the trap (see fig. 7) is placed a chip. By setting the trap over bait and pulling the cord from a sheltered point of observation numbers may be caught. Instead of the box described above, by which the birds are taken alive, an old door or similar device may be employed as a deadfall. In either case the trap should be kept set and baited until the sparrows are not afraid to go under it. During this interval, to avoid accidents to creatures for which it is not intended, as well as to insure stability, it may be supported by a stake driven into the ground instead of by the stick used to spring it. Although the sieve trap is easy to construct and effective in operation, it has the disadvantage that someone must be on hand to pull the string at the proper instant.

Miller Trap.—The trap shown in figures 8, 9, and 10 was designed by Mr. Charles W. Miller, director of the Worthington Society for the Study of Bird Life, who has kindly furnished photographs and drawings showing its construction and has given suggestions for operating it. With one of these traps over 300 sparrows were caught in less than three months on the society's grounds at Shawnee on Delaware, Pa. It is especially adapted to poultry and pigeon yards, where it can be permanently installed. The poultry or pigeons are fed in the trap, the door being left open until sparrows are accustomed to feed there with them. Later the door is closed and by putting a little bait on the shelf and considerable on the ground inside, the sparrows are enticed to enter through the open corners at the top (fig. 10–*a*). After they have learned the way in and out over the shelf, the corners are closed. The sparrows now enter between the partitions (fig. 10–*b*, *b*) and are unable to return. Captives are removed from this trap by means of a short-handled net, from which they can be taken by hand. A few birds should be left in the cage as decoys. Captives are removed and the decoys supplied with food and water at dusk when outside birds are at roost.

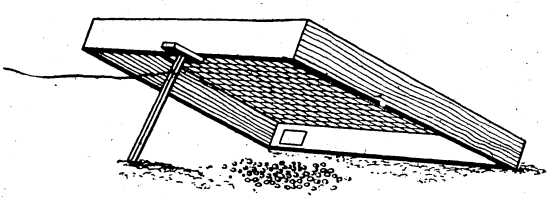

FIG. 7.—Sieve trap.

The construction of the Miller trap may be described under four heads: (1) The cage, (2) the frame, (3) the partitions, and (4) the shields. Figure 10 shows the skeleton of this trap without the wire

netting. This should be painted green or gray before the netting is applied. Regular aviary netting of 1 by $\frac{3}{4}$ inch mesh, or poultry netting of $\frac{3}{4}$-inch mesh, may be used. The door has a hook on each side and spring hinges. Around the top of the cage extends a shelf (fig. 10–*c*) about 8 inches wide.

The underside of the frame (fig. 10–*d*) is perfectly flat all the way around, in order that the partitions may be attached at a uniform height. The ends of two opposite sides extend 6 inches beyond the square to allow the supporting blocks to be placed where they will not hinder the entrance of sparrows when the corners are open

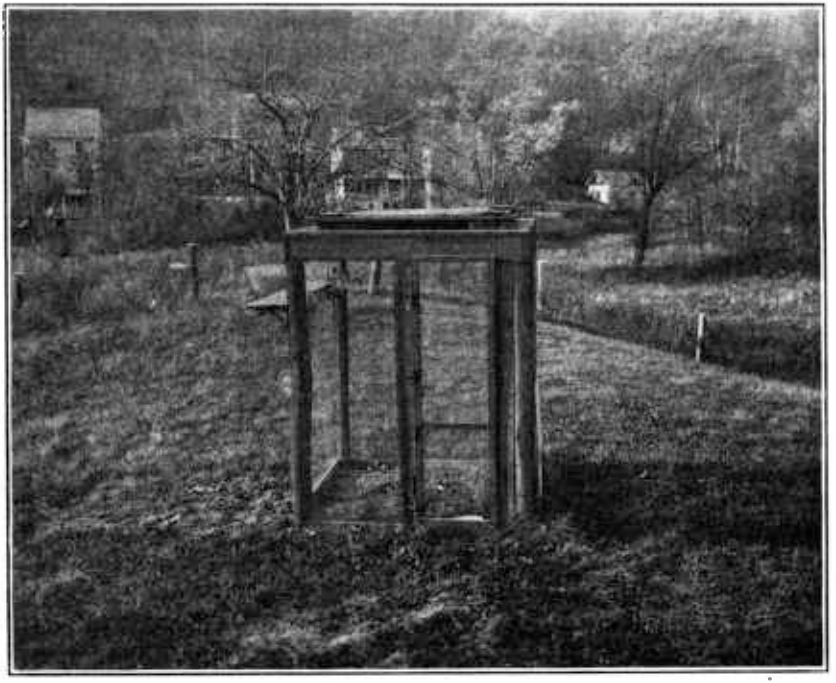

FIG. 8.—Miller trap.

(fig. 10–*f*). The outside measurement of the frame is an inch larger all the way around than the inside measurements of the shelf. After the frame has been painted and covered with wire on the uneven side, it is placed in its final position with relation to the shelf, but without the supporting blocks, and is marked by a pencil drawn along the inner edge of the shelf to show the position for the outer edges of the partitions.

The partitions are sheets of tin 5 inches wide and 6 inches long, having a flap turned over at the top for attachment to the frame and another flap on the outer edge for attachment to the shelf (fig. 10–*b*).

As the sides of the frame are 6 inches wide and the shelf extends inward beneath them 1 inch, the inner edges of the partitions will come even with the inner edge of the frame. The partitions are first nailed to the frame, 2 inches apart, beginning at the middle of each side. The side flaps are nailed to the shelf after the frame has been fastened in position on the corner blocks, which are $2\frac{1}{2}$ inches high. The entrances are thus 2 inches wide and $2\frac{1}{2}$ inches high. The shields are strips of tin nailed to the inner edge of the frame, and extending below it $4\frac{1}{2}$ inches in contact with the inner edges of the partitions, to prevent sparrows in the trap from escaping (fig. 10–*e*). Both

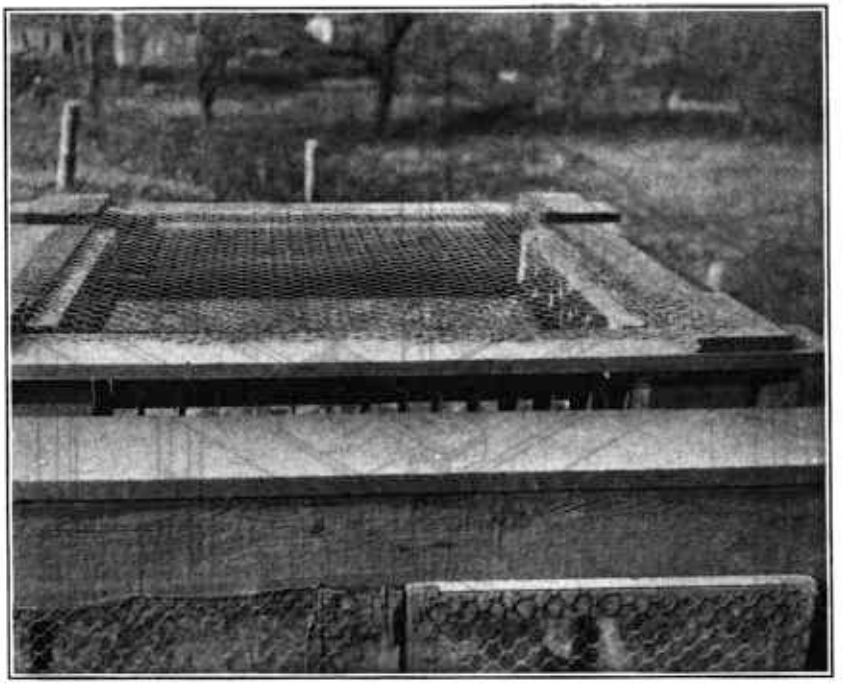

FIG. 9.—Top of Miller trap.

shields and partitions should be painted to prevent rusting. The corners between the series of entrances (fig. 10–*a*) are closed by pieces of tin or thin board hinged or otherwise arranged so as to be easily opened when sparrows are to be enticed to enter.

In case several traps are to be built, it will be advantageous to use unit trap tins (fig. 10–*Ah*), held in place by way plates (fig. 10–*Ak*), instead of separate partitions and shields. In this case, as unit trap tins can be removed from a way plate at any time, the corners may be closed permanently by the blocks supporting the frame, the projecting ends thus being unnecessary.

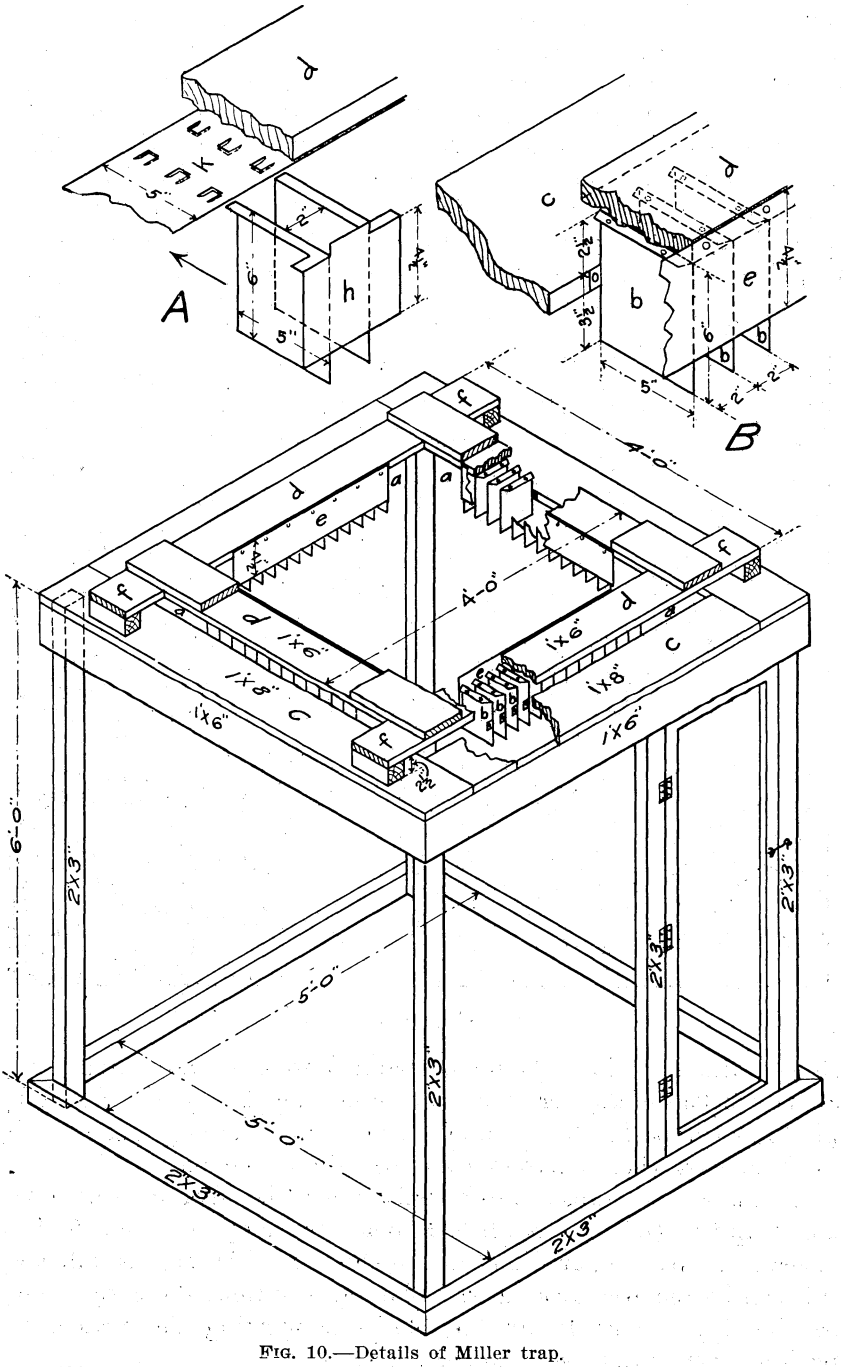

FIG. 10.—Details of Miller trap.

Funnel trap.—When extensive trapping is undertaken, the traps employed must fulfill certain requirements in addition to ultimate efficiency. Especially important are simple and prompt action, portability, and cheapness, all of which are found in the funnel trap.

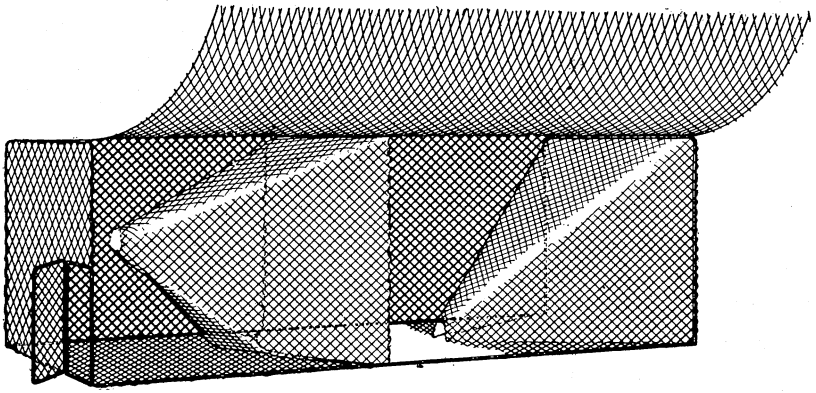

FIG. 11.—Funnel trap. (Side raised to show interior.)

(Fig. 11.) Numerous experiments show that funnel traps usually make a catch on the first day they are set. This trap has no loose parts to become disarranged and requires no tools to keep it in order. Although somewhat bulky, it weighs but little, and when painted

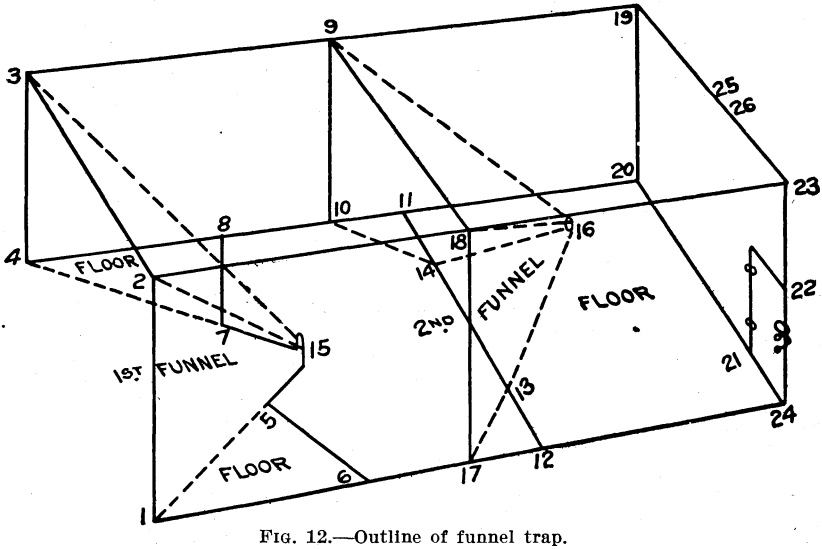

FIG. 12.—Outline of funnel trap.

green or gray is inconspicuous. It is easy to construct, and the cost of material is slight. The funnel trap has been tested on the Agricultural Grounds in Washington with excellent results, and one sent for trial to the Missouri Botanical Gardens at St. Louis during the

past summer caught 300 sparrows in six weeks. Its usefulness in a city garden has already been referred to under "Localization."

The essential parts of this trap are: (1) A half funnel leading into (2) an antechamber, which ends in (3) a complete funnel leading into (4) a final chamber. It is made of woven-wire poultry netting of $\frac{3}{4}$-inch mesh and is reenforced around the open end and along the sides at the bottom by No. 8 or No. 10 wire, which is used also around the aperture for the door and around the door itself.

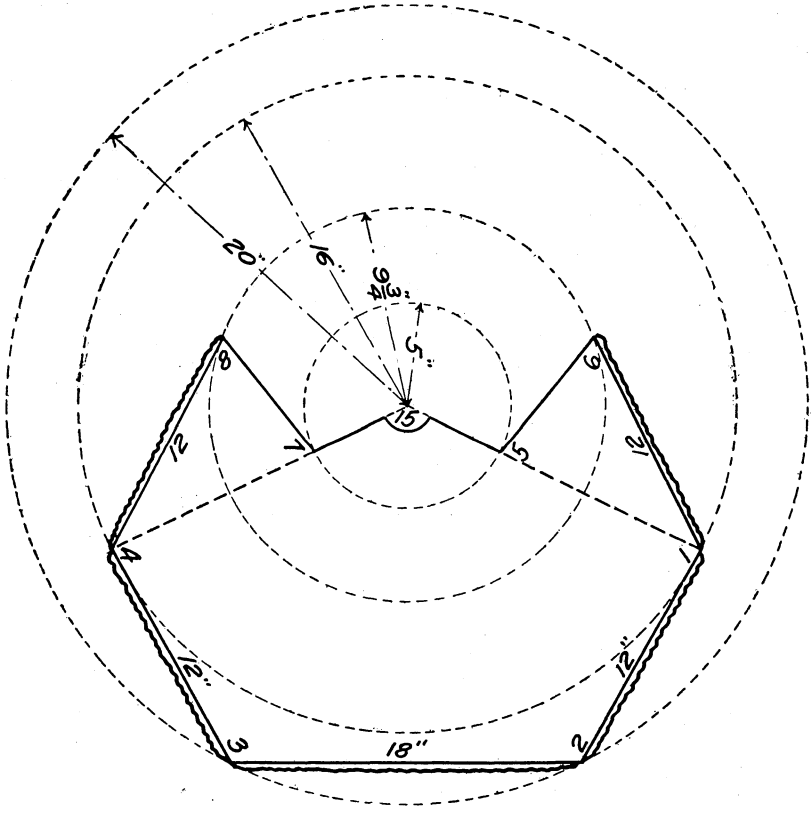

FIG. 13.—Pattern for first funnel of a trap to be 36×18×12 inches.

The angles between the first funnel and the walls of the antechamber are floored with netting, and the final chamber is floored with the same material. The accompanying drawings will enable anybody handy with tools to construct one of these traps in a few hours. These plans are for a trap 3 feet long, a foot and a half wide, and a foot high. At ordinary retail prices the cost of material will be about 70 cents. Paper patterns for the two funnels can be made by first drawing the concentric circles, as shown in figures 13 and 14, and then laying off the straight lines, beginning with the longest.

The wavy outlines indicate that the pattern is to be cut half an inch outside of the straight lines to allow extra wire for fastening the cones to the top and sides of the trap. Figure 15 shows how all the parts of a trap having the above dimensions may be cut from a piece of netting 4 feet wide and 6 feet long. The full lines in this figure indicate where the netting is to be cut and the broken lines where it is to be bent. The numbers at the angles in figures 13, 14, and 15 correspond with those in figure 12, which shows in outline the rela-

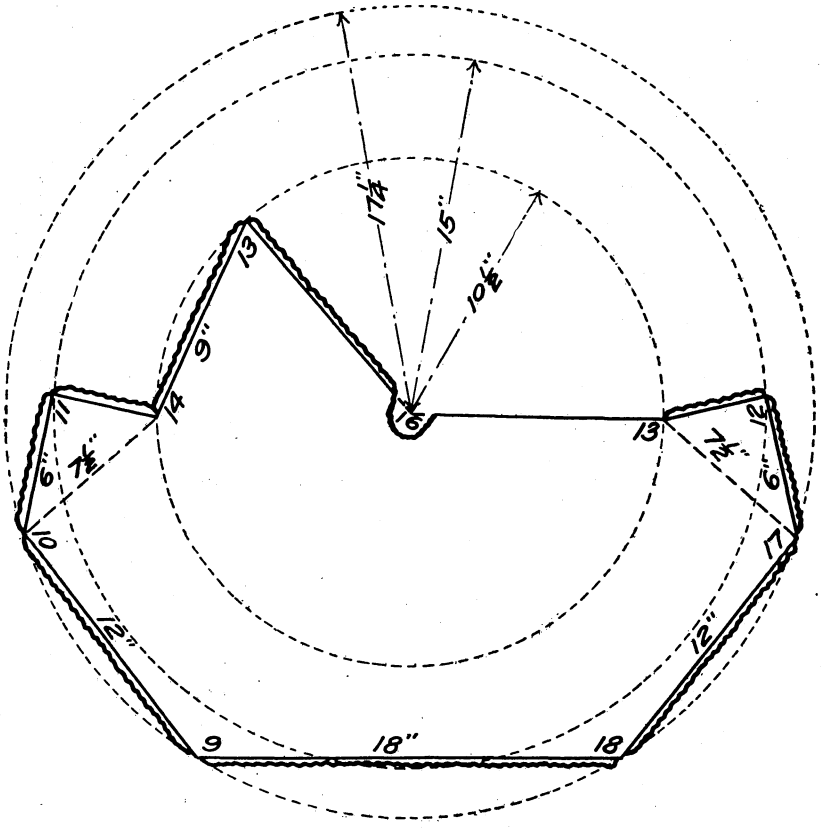

FIG. 14.—Pattern for second funnel of a trap to be 36×18×12 inches.

tion of the different parts as they appear when assembled. A trap of the above dimensions is as small as can be used satisfactorily. Where sparrows are very numerous a larger size is recommended. Figure 16 shows how a trap 4 feet long, 2 feet wide, and 15 inches high may be made from a piece of netting 4 by 10 feet. This is a very good size for parks and large private grounds.

In setting a funnel trap a place should be selected where sparrows are accustomed to assemble. Often there are several such places in

a neighborhood, in which case it is advisable to move the trap daily from one of them to another, because the birds appear to associate the locality rather than the trap with the distress of their imprisoned comrades. Canary seed, hemp seed, wheat, oats, and bread crumbs are excellent baits. The bait should be scattered in the antechamber and first funnel and also, sparingly, outside about the entrance. A live sparrow kept in the trap as a decoy will facilitate a catch. In case native birds enter a trap they may be released without harm. Trapping may begin at any time after young sparrows are able to take care of themselves, which is usually by July 1. Each day's catch should be removed from the trap at nightfall, and if a decoy is used it should be comfortably housed and otherwise cared for when off duty.

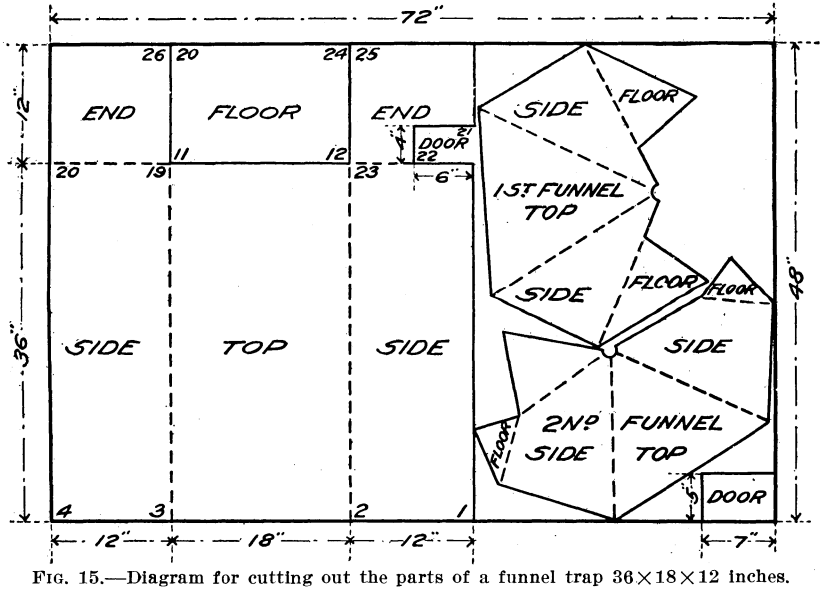

FIG. 15.—Diagram for cutting out the parts of a funnel trap 36×18×12 inches.

In removing sparrows from either a funnel or a sieve trap the receiving box shown in figure 17 will be found useful. It should be about 6 inches square and 18 inches long, inside measurement. The door, hinged at the bottom and turning inward, is controlled by the part of its wire frame extending through the side of the box to form a handle. The box as it appears in the figure is ready to be placed before the open door of a trap from which birds are to be driven.

POISONING.

Where the use of poison is not prohibited by law it may be employed effectively to reduce the number of sparrows. Of the different poisons tested the most satisfactory is strychnine, which is

easy to prepare and acts quickly. Wheat has proved to be a good bait as well as an excellent vehicle for administering the drug. A convenient method of preparing poisoned bait is as follows: Put one-eighth ounce of pulverized strychnine into three-fourths of a gill of

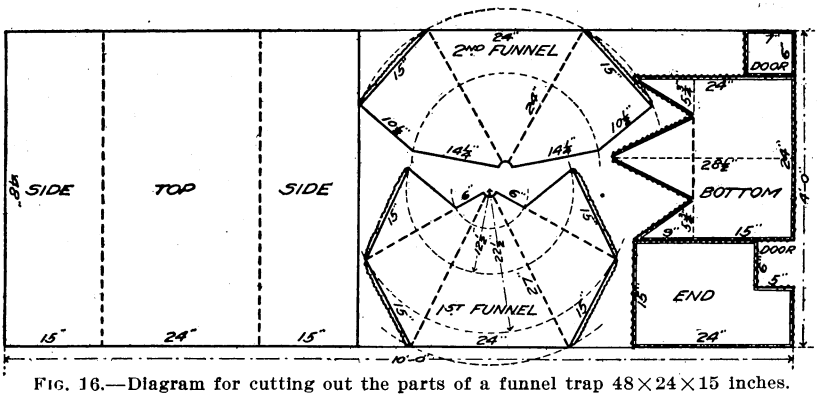

FIG. 16.—Diagram for cutting out the parts of a funnel trap 48×24×15 inches.

hot water, add 1½ teaspoonfuls of starch or wheat flour moistened with a few drops of cold water, and heat, stirring constantly till the mixture thickens. Pour the hot poisoned starch over 1 quart of

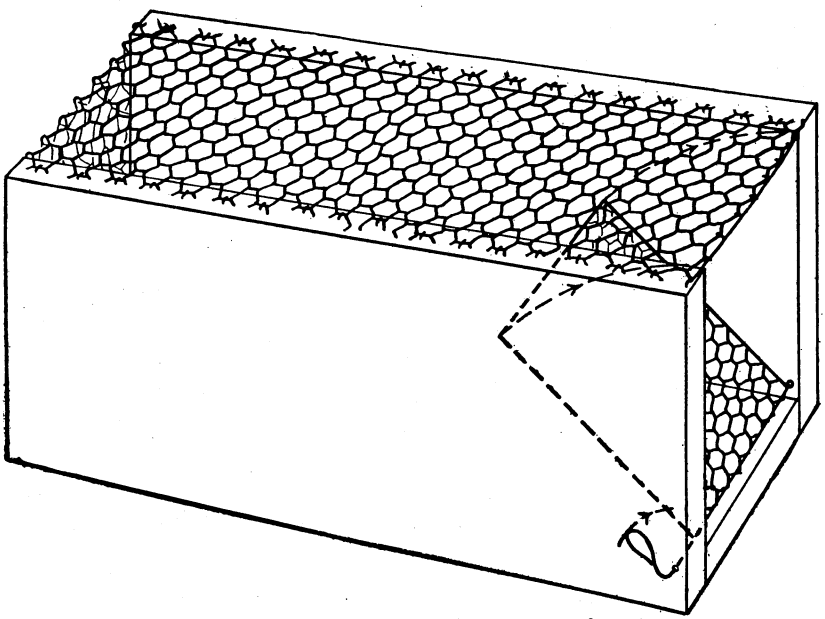

FIG. 17.—Receiving box for removing sparrows from traps.

wheat and stir until every kernel is coated. Small-kerneled wheat sold as poultry food, if reasonably clean, is preferable to first-quality grain, being cheaper and more easily eaten by the sparrows. A 2-quart glass fruit jar is a good vessel to mix in, as it is easily shaken

and allows the condition of the contents to be seen. If the coated wheat be spread thinly on a hard, flat surface, it will be dry enough for use in a short time. It should be dried thoroughly if it is to be put into jars and kept for future use. Dishes employed in preparing poison may be safely cleansed by washing.

Other seeds, as oats, hemp, or canary seed, may be used instead of wheat in the above formula, but they are less economical because much of the poison is lost when they are hulled, though enough of it usually sticks to the mouths of the sparrows to produce fatal effects. As wheat has no hull that a sparrow can remove, it is ordinarily preferable to other seeds. Bread, in thin slices, spread with the strychnine-starch mixture may be used to advantage alternately with seeds.

In case it is impracticable to poison sparrows at their regular feeding grounds, they may be attracted to a suitable place by preliminary baiting. In northern latitudes the best time to put out poison is just after a snowstorm, when other food is covered. The feeding place should be cleared of snow and the poison laid early in the morning. The poison should be well scattered, so that many birds may be able to partake at the same time, since after a few are affected their actions excite the suspicion of their comrades. Usually a few sparrows get only enough strychnine to paralyze them for a few hours, after which they recover. It is important, therefore, to visit the feeding places a short time after distributing poison to prevent such birds from escaping. It is well also to remove dead birds promptly to avoid exciting the suspicious of those that are unaffected. In deciding the amount of poisoned wheat to put out at one time, it is well to estimate the number of sparrows frequenting a feeding place and to allow about 20 kernels for each sparrow. Although 2 kernels of wheat coated with the solution described below have been known to kill a sparrow, 6 or 7 kernels are required to insure fatal results, and much more than a fatal dose is frequently taken. The sparrows that recover after taking poison or that become frightened by the death of comrades, will forsake a feeding place if poison is kept there constantly. If, therefore, one wishes merely to keep them off his land, he can do so by maintaining a supply of poisoned bait for them. On the other hand, if extermination is the object sought, unpoisoned bait should be put out after each killing until the birds have recovered confidence. There is an advantage in having several feeding grounds that may be used in rotation with different kinds of bait. Under these circumstances the sparrows forget their fear of each feeding ground while the others in turn are baited. Only as much poison should be put out as is likely to be eaten in one day, since exposure to moisture reduces its virulence. Any grain coated

by the above process and left on the ground will become harmless after a few rains.

As far as practicable sparrows should be poisoned in secluded places where domestic animals will not be endangered. Roofs, back yards, and unused poultry runs are favorable situations. Where there are doves or poultry, sparrows may be induced to feed in small covered pens made of coarsely meshed wire netting, and having the sides raised an inch and a half above the ground. Proximity to low trees, grape arbors, and similar retreats has the advantage that sparrows go to such places between meals, and many dead birds will be found there well away from the bait. If undisturbed, poisoned birds will usually be found within a short distance of where the bait was spread, as death occurs in from 3 to 20 minutes.

Sparrows are so keenly alive to danger that anything which once gives them an unpleasant experience is thereafter consistently avoided. If they take just enough poison to make them sick, only extreme hunger will tempt them to eat poisoned bait again. For this reason the use of poison in connection with traps is advocated. When sparrows are trapped they rarely escape to profit by their experience. In practice it has been found that by the time traps fail, only a small part of the original flock remains. The survivors, although well aware of danger in traps, are as susceptible to the allurements of poisoned bait as ever. Hence the combined use of traps and poison is decidedly more advantageous than either of them alone.

ENGLISH SPARROWS AS FOOD.

In most localities in the United States English sparrows are a pest. There is therefore no reason why the birds should not be utilized for food in this country, as they have been in the Old World for centuries. Their flesh is palatable, and though their bodies are small, their numbers fully compensate for their lack of size. Birds that have been trapped may be kept alive in large outdoor cages, sheltered from storms and cold winds, until they are wanted for the table. It is unprofitable to keep them long, however, as the quantity of grain or other food they require daily amounts to more than half their own weight. A variety of food is necessary to keep them in good condition. Bread, oats, wheat, bran and corn-meal mash, lettuce, cabbage, and tender shoots of sprouting grain are some of the things they relish. A supply of clean water is essential.

To kill mercifully a sparrow that has been trapped, place the thumb nail at the base of its skull and dislocate its neck by hard and quick pressure. To dress it, cut off the legs, the wings at the outer joint, and the neck close to the body; strip off the skin, beginning at

the neck; make a cut through the body wall extending from the neck along the backbone till the ribs are severed, then around between the legs to the tail, and remove the viscera. If sparrows are to be broiled, save only the breasts, as this method of cooking so shrivels and parches the lesser parts as to render them worthless. In this case tear off a strip of skin from wing to wing across the back; grasp the wings, in front of the body, in one hand and the neck in the other, and by a quick pull separate the breast from the ribs; turn the breast out of the skin that covers it, and sever the wings at the second joint. The whole operation requires but a fraction of a minute and it can be done by the fingers alone.

Sparrows may be cooked by any of the methods employed for reedbirds or quail. When boned, broiled, buttered, and served on toast they are particularly good and compare favorably with the best kinds of small game.

SUMMARY.

English sparrows are abundant in most of the towns in the United States and in many suburban districts. They are noisy, filthy, and destructive. They drive native birds from villages and homesteads. Though they are occasionally valuable as destroyers of noxious insects, all things considered, they do far more harm than good. Practicable methods of dealing with them include destruction of nests, shooting, trapping, and poisoning. Of these, trapping is unquestionably the best. English sparrows are good to eat, and their use as food is recommended because of their nutritive value and as a means of reducing their numbers.

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